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(54) Title: COMPRESSION/DECOMPRESSION METHOD

(57) Abstract

Computers connected to the Internet generally have loaded thereon a "browser" to enable the user of the computer to view information contained in Text Markup Language files known as web pages. The invention disclosed relates to a method of compressing web pages by replacing the most commonly used elements within the web page text files, known as tags, with a simple control code and simultaneously creating a look-up table string containing the control codes and the corresponding tags. The result is a compression string representative of the original web page file and a look-up string, both of which are inserted into a simple web page file having lines of code recognisable and executable by said browser. On receipt of said simple web page file, the browser recognises and executes the code which works on the compression string using the look up table string to expand said compression string which is then recognised by the browser as being in conventional web page file format. The invention has the added advantage of allowing a web page to be loaded and displayed as the expansion of the compression string is occurring.

```
<HTML><HEAD>
<SCRIPT>
// copyright Guy Middleton May 5 1999 Euronet UK Ltd
// no use of this code or method can be made without permission from the owner
in writing
Lib = ""
function wXcVsd() {
var L = new Array()
var Lib="",
<,>,.,=,/,TD,.,,to,and,,FONT,the,P,A,FACE,SIZE,of,HELVETICA,ARIAL,Horsforth,VALIGN
var a=1,b=1,Word
for (var i=1; i <= Lib.length; i++) {
Word = Lib.substring(i,i+1)
if (Word=="",")(
Word = Lib.substring(b,(i))
b=i+1
L(a)=Word
a++)
}
var Code = "...meta
http-equiv="REFRESH" content="0"; URL="
...HEIGHT="995
...MIDDLE ...A 68 ...logo3p
var Tag = 1
var E=0
for (var i=0; i<=(Code.length-1); i++){
E=escape(Code.charAt(i))
E=E.substring(1,(E.length +2))
E = parseInt(E,16)
if (E==255){Tag = 0)
if (E==254){Tag = 1}
if (E!=246 && E!=253 && E!=254 && E!=255 && Tag==1){document.write (L(E))}
if (E!=246 && E!=253 && E!=254 && E!=255 && Tag==0){document.write
(Code.substring(i,i+1))}
if (E==246){document.write ("")}
}
document.close()
}
</SCRIPT>
</HEAD><BODY onLoad=wXcVsd()></BODY></HTML>
```

Compression/Decompression Method

This invention relates to a compression/decompression method, and more particularly to a compression/decompression technique for compression and expanding computer readable files which are to be transmitted from one computer and received by another computer over a medium of limited bandwidth, for example across interlinked communications networks, or through space using infra-red or radio transmission techniques.

The explosive growth experienced in information technology industry over the previous 20-30 years has resulted in a proliferation of new technologies, not least of which is generically termed "The Internet" or "World Wide Web". Although a comprehensive explanation of the Internet is beyond the scope of this application, a brief explanation of the practical mechanics of the Internet will clarify the invention to the reader.

The Internet is essentially a global network of computers each of which can communicate with a number of other computers also on that global network to allow for the world-wide transmission and reception of information. Redundancy is incorporated into the Internet in that any one computer on the Internet is linked to a plurality of others, so the failure of any one of those computers will not result in an overall failure of the Internet. Transmission of data over the Internet is essentially in the form of packets of data which form part of the entire data being transmitted, and although one of the computers on the Internet may fail or be inactive at any one time, the data can still be transmitted albeit via a different route.

Aside from the permanent availability of the Internet and the concomitant facility for guaranteed data transmission at any time, the most practical benefit of the internet has been for the retrieval

of information by individuals by accessing Internet or "Web" sites. A web site is effectively a number of separate individual computer files containing text, graphics, animations, and the like which reside on portion of a hard disk drive of a computer connected to the Internet. Each web site consists of a plurality of different pages providing information concerning the particular company hosting that web site, a number of "links" which a user viewing the particular site on his computer can select using a computer mouse and be automatically redirected, either to another web page within that site or to a totally different site, and in many cases some advertisements for other companies who have web sites. Each of these advertisements itself constitutes a link to that company's web site.

A few companies operating computers connected to the Internet maintain databases of all the various web sites around the world and their content, and such companies have their own web sites, particular pages of which allow for a user to input one or two key words of a topic covered by web sites anywhere in the world. The search engine then queries the underlying database for matches and the database server automatically generates a web page consisting of a number of links to web sites around the world, the pages of which include the particular search terms entered by the user. It is to be mentioned that the Internet has been in existence since the 1970s, although it is only in the 1990s that it experienced explosive growth as global media, Industrial and Commercial Organisations, Governments, Scientific and Academic Institutions, and world-wide business in general have begun to realise the potential of the Internet as a medium, primarily for selling. Although the internet was originally invented for the provision and sharing of information between Military and Defence institutions in the USA, and was adopted subsequently by academic institutions for the same purpose, the Internet continues to be an invaluable resource for

Computer Programmers, Developers and the like, and it is up until recently the more computer literate individuals who have enjoyed the most benefit from the Internet at this time.

One of the fundamental disadvantages of the Internet as an information transmission medium is "bandwidth". This term is broadly used to describe the transfer rate of a particular communication link. For example, a simple analogue telephone wire can carry data at a rate of 56kbps (thousand bits per second), whereas a dedicated leased line connection is capable of transmitting data at speeds of up 10Mbps and greater. Transatlantic cables laid by large telecommunications service providers can even transmit data at over 200Mbs. The vast majority of the world's population however currently connect either at work over their employers Local Area Network where the speed of data transmission and reception is directly affected by the number of computers on the network and the particular type of network being operated, or at home via a simple analogue telephone line. The vast majority of data is therefore transmitted and received slowly, and any reduction in the amount of data being transmitted would immediately improve the appeal of the Internet and furthermore reduce the costs of connecting thereto, which in the cases of a leased line connection may be in terms of many thousand pounds per annum.

Additionally, many Internet Service Providers (i.e. those companies which exist solely to provide Internet access to those companies and individuals whose computers or computer networks are not connected to the Internet) charge for access to the Internet by measuring the quantity of information, i.e. data transmitted through their servers to the particular user subscribing to their service.

To provide some indication of the magnitude of current Internet traffic, or at least the quantity of data which is currently available,

there are, at the earliest filing date of this application, approximately 150 million users of the Internet, with approximately 20 million computers interconnected. The number of people connected to the Internet at any one time is currently increasing at a very approximate rate of 35 every 20 seconds. There are well over 100 million web pages, and a simple search on one of the many Internet search engines consisting of the word "computer" (being a term which is likely to be included in a large number of web site pages because many such web sites are devoted to computing and related technologies) can regularly result in links to over one million of such pages.

The vast majority of Web pages are essentially individual computer files comprising a mixture of text, graphics, background images, and animations. Each page can be written in a variety of different formats based on what is known as a "markup" language. Internet browsers, i.e. those computer programs which allow their user to view web pages, are generally capable of interpreting all the various markup languages in which a web page may be written and thus display the web page in a desired manner. Such markup languages are used because in the early days of the Internet and to a lesser extent today, there were so many different computer packages available for presenting information on a page on a computer screen and so many ways of increasing the size, spacing, and formatting of text that there was a need for a universal language which could be interpreted by a simple program, i.e. the browser. Hypertext Markup Language (or HTML as the language is more commonly known) consists of a number of "tags" which provide information to the browser decoding same, usually as the information is received through the telephone line or across a LAN, where the information specified within the said tags should be displayed on the web page.

Modern HTML consists of a great many tags which constrain the browser to display information within the web page in a certain manner, and more recently certain of these tags can be used to inform the browser of existence of an executable program within the tag. Most modern browsers possess the capability to execute lines of program code within web page information, and those that do not can be provided with a "plug-in" module program that allows this functionality.

JavaScript (Trade Mark), ASP (Active Server Pages, Trade Mark), and VB Script (Visual Basic Scripting, Trade Mark) are all examples of computer programming languages which may be incorporated within a web page to increase the functionality thereof, allow for dynamic alteration of web pages depending on the circumstances and program variables, and which can be executed "on the fly" by modern browsers.

The above executable languages have only recently begun to be extensively implemented in Web Pages to control their content dependent on certain variables, for example the particular personal choice of the user of the browser. In general, such languages only serve to increase the overall byte size of the HTML file being downloaded and read by the browser. Although the functionality which such languages provide is in certain circumstances invaluable, there is an increase in the amount of internet traffic as a result and the time taken for the HTML file to be downloaded is thus increased.

In the light of the above, it will be appreciated that any slight reduction in the amount of Internet traffic could be invaluable.

The invention thus has as its primary object the provision of a means for the reduction of Internet traffic.

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According to the invention there is provided a compression technique for compressing a file containing tags, information, and code constituted of simple text readable and/or executable by a browser program for display therein, said technique comprising the steps of analysing the file for the number of instances of particular segments of text, replacing the most commonly occurring segments with control codes specific to that matter being replaced to create a compression string of uncompressed textual matter and control codes, and creating look-up table means for facilitating the recognition and replacement of the control codes during subsequent expansion of the compression string.

Preferably, the compression string is repackaged in an output file having at least one pair of tags readable and/or executable by a browser.

Preferably the look-up table means is additionally repackaged in the output file of the process.

It is further preferable that the repackaging of the compression string and the look-up table means in the output file is accompanied by the insertion of a browser executable expansion routine which expands the compression string.

Most preferably, the compression string and the look-up string are provided in the form of variable definitions to the browser.

It is yet further preferable that the output file consists only of initialisation and termination tags, immediately followed and preceded with script identifying tags which bound the compression string, the look-up string, and the browser executable expansion routine.

According to a second aspect of the invention there is also provided a file when compressed according to the compression technique as specified in the primary aspect of the invention.

According to a third aspect of the invention there is provided a compression string and look-up means resulting from the application of the compression technique according to the invention.

According to a fourth aspect of the invention there is provided an expansion technique for creating a web page containing tags, information, and code constituted of simple text readable and/or executable by a browser program for display therein, constituting the steps of consecutively analysing each character or group of characters of a compression string consisting at least of uncompressed textual matter and control codes, replacing control codes within the compression string with textual matter corresponding to the particular control code as contained in look-up means to create a string of textual matter interpretable by a browser, and outputting said resulting textual matter for display by said browser.

Preferably the output of textual matter occurs simultaneously with the expansion of the compression string.

Preferably the executable code within the browser readable file is implemented in JavaScript™ or VB Script™.

The fundamental advantages of the compression technique according to the invention are that web pages can be compressed by a factor of between 40-60% while remaining entirely readable by the vast majority of the browser programs currently in use in the world.

The underlying inventive concept of the invention lies in the realisation of the inventor that web pages consists of a large number of often identical mark-up language tags which can be replaced by control codes, together with any textual matter within the file which appears frequently within said file. Additionally, the realisation that the execution of computer code by the browser program on the user's computer is in all cases a much speedier process than the transfer of the information constituting a file through an analogue or digital telephone line, company LAN or WAN (Wide Area Network), and accordingly it is far more efficient to use executable code to expand and reconstitute the original web page at the users' computer than to download an uncompressed version of the web page.

A further advantage of the invention is realised on the company "Intranet" where a company's information is presented to the employees in the form of predominantly text-based web pages. Company Intranets are exceedingly bandwidth-intensive in that a very large amount of information can be transmitted over the company network. The reduction of Intranet traffic which would be obtained by compression of all the said web pages would reduce network traffic, and thus release network resources for the transmission of additional information. Ultimately, users would not only experience an increase in speed with which they could view information as a result of the compression technique according to the invention, but the speed with which any information reached a particular machine over the network would increase in general because of the reduction in network traffic.

Experimentation has shown that the compression method according to the invention can achieve 40-60% compression depending on the content of a particular page. For example, web pages consisting of a large number of images will not be compressed as efficiently as web

page consisting predominantly of text, but the mere fact that any web page comprises at least a pair of identical tags (the structure of mark-up languages necessitates this) renders all web pages compressible to some degree by the method according to the invention.

A specific embodiment of the invention is now described by way of example with reference to the accompanying Figures which comprise lines of JavaScript™ code used in the invention.

Figure 1 shows an example of a file readable by a browser and compressed according to the invention, and

Figure 1A shows the original source HTML code on which the compression according to the invention was conducted to result in the code shown in Figure 1;

Figures 2-6 show example code used for the compression of conventional Web Pages.

Referring firstly to Figure 1, there is shown is simple textual representation 2 of a computer file which is both readable by a modern browser program. The file contains conventional hypertext mark-up language tags 4, 6 which those skilled in the art will immediately recognise as indicating to the browser program the beginning and end of the web page. The "<SCRIPT>" and "</SCRIPT>" tags 8 indicate to the browser program that what text exists between those tags is not to be processed as commands relating to the displaying of convention web page information, but is to be processed as lines of executable code. Thus it will be understood that the compressed file 2 consists almost entirely of executable code, the only exception being the tags 4, 6 which inform

the browser that the file is readable as a web page and the tags 8 which instruct the browser to execute lines of code.

The original web page from which the compressed file 2 was derived is shown in Figure 1A, and it can be instantly appreciated that there is much repetition of the text appearing within the various tags. The invention takes particular advantage of the fact that mark-up languages work on the principle that each particular piece of text which is to appear with certain formatting on the web page is preceded and followed by one or more pairs of tags to instruct the browser to apply specific formatting to the particular piece of text between the respective tags. Accordingly, practically every tag within a web page appears twice. Web pages which are particularly formatting-rich can thus be compressed with greater efficiency as relevant tags are removed by the process.

The examples of the compressed file 2 and the original web page shown in Figures 1 and 1A are provided solely to demonstrate the operation of the invention, and in reality it may be imprudent to compress web pages of the type shown in Figure 1A because the resulting compressed file is actually larger than the original. A clearer understanding of the number of repeated tags incorporated in a typical web page can be gleaned from Figures 7-15 which show the number of lines code typically used in a particularly formatting-rich web page. It is to be mentioned that the invention encompasses the compression not only of tags, but of every single character which constitutes the web page and whose replacement may result in optimised compression because of their repetition throughout the document. Examples include commonly used words such as "the", curly brackets/braces, greater than and less than signs, and the like.

Referring again to Figure 1, within the compressed file 2 there is a look-up string 10 (the length of which is much longer than shown in

the Figure), and a compression string 12 comprising control codes
identified primarily by square boxes and textual matter which the
compression technique statistically determined it would be
inefficient to replace with control codes.

An expansion cycle sequentially counts through each individual
character within the compression string and expands the string if a
control code is encountered by replacing said control code with its
corresponding entry from the look-up string 10, and write
commands 16 instruct the browser to display portions of the
expanded string sequentially and during execution of the code. In
this manner the impression to the user during code execution is that
the web page is being conventionally downloaded, albeit much
quicker than would be usual for that particular user's connection.

As mentioned above, Figures 2-6 show a specific embodiment of
how the compression technique according to the invention could be
implemented in lines of code, and from such code it will be
immediately apparent to the skilled person how the compression
technique ascertains which textual matter within the original web
page is to be replaced with a control code.

In a modified embodiment of the invention, it is foreseen by the
applicant that a specific expansion routine similar to that disclosed
in the code of Figure 1 could be provided as a plug-in for existing
browsers such that only the compression string and the look-up
string need be downloaded onto a user's computer for expansion by
a suitably enabled browser. In this circumstance, the compressed
file 2 would consist only of the initial and terminal tags 4, 6 and of
pairs of tags which would identify the said strings encapsulated
between said pairs of tags to the browser for expansion of the
compression string using the look-up string. In this manner, yet
further compression efficiency could be achieved. As an alternative

to a plug-in, the executable expansion routine could be hard-coded within the code kernel of the browser, or otherwise integrated into the code which controls the operation of the browser.

In a yet further modification of the invention, it is foreseen that the only the compression string need be included in the compressed file and encapsulated between a suitable pair of identifying tags, with both the expansion routine and a universally applicable look up string being incorporated into the browser program on a user's computer. In this manner the size of web pages to be downloaded could be minimised, and compression efficiency concomitantly maximised.

CLAIMS

1.   A compression method for compressing a file containing tags, information, and code constituted of simple text readable and/or executable by a browser program for display therein, said technique comprising the steps of analysing the file for the number of instances of particular segments of text, replacing the most commonly occurring segments with control codes specific to that matter being replaced to create a compression string of uncompressed textual matter and control codes, and creating look-up table means for facilitating the recognition and replacement of the control codes during subsequent expansion of the compression string.

2.   A method according to claim 1 wherein the compression string is repackaged in an output file having at least one pair of tags readable and/or executable by a browser.

3.   A method according to claim 2 wherein the look-up table means is additionally repackaged in the output file.

4.   A method according to claim 3 wherein the repackaging of the compression string and the look-up table means in the output file is accompanied by the insertion of a browser executable expansion routine which expands the compression string.

5.   A method according to claim 4 wherein the compression string and the look-up string are provided in the form of variable definitions to the browser.

6.   A method according to claim 5 wherein the output file consists only of initialisation and termination tags, immediately followed and preceded with script identifying tags which bound the

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compression string, the look-up string, and the browser executable expansion routine.

7.   A method according to claim 6 wherein said method is performed on a text markup file which can be read by a suitable computer browser program.

8.   A compression string derived from a file containing tags, information, and code constituted of simple text readable and/or executable by a browser program for display therein, said string resulting from an analysis of the file for the number of instances of particular segments of text followed by a replacement of the most commonly occurring segments with control codes specific to that matter being replaced, said compression string comprising uncompressed textual matter and control codes.

9.   A compression string according to claim 8 when provided together with look-up table means for facilitating the recognition and replacement of the control codes during subsequent expansion of the compression string.

10.   An expansion technique for creating a computer browser program readable file containing tags, information, and code constituted of simple text readable and/or executable by said browser program for display therein, constituting the steps of consecutively analysing each character or group of characters of a compression string consisting at least of uncompressed textual matter and control codes, replacing control codes within the compression string with textual matter corresponding to the particular control code as contained in look-up means to create a string of textual matter interpretable by a browser, and outputting said resulting textual matter for display by said browser.

11. A technique according to claim 10 wherein the output of textual matter occurs simultaneously with the expansion of the compression string.

12. A technique according to claim 11 wherein the executable code within the browser readable file is implemented in JavaScript™.

13. A technique according to claim 12 wherein the executable code within the browser readable file is implemented in VB Script™.

```
<HTML><HEAD>                    4          8
<SCRIPT>
// copyright Guy Middleton May 5 1999 Euronet UK Ltd
// no use of this code or method can be made without permission from the owner
in writing
Lib = ""
function wXcVsd() {
var L = new Array()
var Lib=",'.                                          10
,<,>,,=,,/,TD,.,,to,and,,FONT,the,P,A,FACE,SIZE,of,HELVETICA,ARIAL,Horsforth,VALIGN

var a=1,b=1,Word
for (var i=1; i <= Lib.length; i++) {
Word = Lib.substring(i,i+1)              14
if (Word==","){
Word = Lib.substring(b,(i))
b=i+1
L[a]=Word                            12
a++)
}

var Code = "  &  y   y        y    ymeta
httpp#ÿequivp  öÿREFRESHpö ÿcontentp öÿ3; URLp N
&ö ÿ   ÿÿ       ö»ö ×  ö°ö ö ö°ä ø°ö°ö°    ö»ö ÿÿ  &  U ^ ÿHEIGHTp ÿ95%
p  u<  u ; u öÿ u        ÿMIDDLE p  (    A öÑ    &ö      ü !ö  ÿlogo3p
 ö                ö &öÿ ö°öÿ ä& ÿÿ"
var Tag - 1
var E=0
for (var i=0; i<=(Code.length-1); i++){
E=escape(Code.charAt(i))
E=E.substring(1,(E.length +2))
E = parseInt(E,16)                               16
if (E==255){Tag = 0}
if (E==254){Tag = 1}
if (E!=246 && E!=253 && E!=254 && E!=255 && Tag==1){document.write (L[E])}
if (E!=246 && E!=253 && E!=254 && E!=255 && Tag==0){document.write
(Code.substring(i,i+1))}
if (E==246){document.write ('"')}
}
document.close()                8          16
}
</SCRIPT>
</HEAD><BODY onLoad=wXcVsd()></BODY></HTML>
                                                 6

                          2
```

FIG. 1

```
<HTML>
<HEAD>
 <TITLE>Horsforth First</TITLE>
   <meta http-equiv="REFRESH" content="3; URL=main.html">
</HEAD>

<BODY BGCOLOR="#FFFFFF" TEXT="#000080" LINK="#000080" VLINK="#0(
80"
ALINK="#FFFFFF">

<TABLE WIDTH=100% HEIGHT=95% BORDER=0 CELLPADDING=0 CELLSPACING=
<TR><TD VALIGN=MIDDLE ALIGN=CENTER><A HREF="main.html"><IMG BORI
=0
SRC="images/logo3.gif"></A></TD></TR></TABLE>
</BODY>
</HTML>
```

FIG. 1A.

```
Option Compare Database
Option Explicit

Public Function CheckTags()
' // copyright Guy Middleton May 5 1999 Euronet UK Ltd. No use of this code
method can be made without permission from the owner in writing
' This utitlity reads all the web pages currently in the database and finds
1 the words in the TAGs so that they can then be sorted to enable programmi
of a compression thing
DoCmd.RunMacro "Web Pages First Record"
Dim Count, Count2, PageHTML, Tag, a, b, c, Word
Do While Not IsNull(Forms![web pages]![URL])
PageHTML = Forms![web pages]![Content]
b = 1
Tag = False
    For a = 1 To (Len(PageHTML) - 0)
        If Mid(PageHTML, b, 1) = "," Or Mid(PageHTML, b, 1) = "." Or Mid(Pa
TML, b, 1) = " " Or Mid(PageHTML, b, 1) = "<" Or Mid(PageHTML, b, 1) = ">"
Mid(PageHTML, b, 1) = "=" Or Mid(PageHTML, b, 1) = "\" Or Mid(PageHTML, b,
= """" Or Mid(PageHTML, b, 1) = "/" Or Mid(PageHTML, b, 1) = "!" Or Mid(Pag
ML, b, 1) = vbCr Or Mid(PageHTML, b, 1) = "-" Then
            Word = Mid(PageHTML, b, 1)
            If Not IsNull(Word) Then
                If Len(Word) > 0 Then
                    Forms![TagWords]![Word] = Word
                    DoCmd.RunMacro "TagWords Next Record"
                End If
            End If
            b = a + 1
        End If
        If Mid(PageHTML, a + 1, 1) = "," Or Mid(PageHTML, a + 1, 1) = "." O
id(PageHTML, a + 1, 1) = " " Or Mid(PageHTML, a + 1, 1) = "<" Or Mid(PageHT
 a + 1, 1) = ">" Or Mid(PageHTML, a + 1, 1) = "=" Or Mid(PageHTML, a + 1, 1
 "\" Or Mid(PageHTML, a + 1, 1) = """" Or Mid(PageHTML, a + 1, 1) = "/" Or
(PageHTML, a + 1, 1) = "!" Or Mid(PageHTML, a + 1, 1) = vbCr Or Mid(PageHTM
a + 1, 1) = "-" Then
            Word = Mid(PageHTML, b, (a - (b - 1)))
            If Not IsNull(Word) Then
                If Len(Word) > 0 Then
                    Forms![TagWords]![Word] = Word
                    DoCmd.RunMacro "TagWords Next Record"
                End If
            End If
            b = a + 1
        End If
    Next
DoCmd.RunMacro "Web Pages Next Record"
Loop
End Function

Public Function WriteJavascript()
' // copyright Guy Middleton May 5 1999 Euronet UK Ltd. No use of this code
method can be made without permission from the owner in writing
' This utitlity reads all the web pages currently in the database writes a
pressed version
DoCmd.RunMacro "Web Pages First Record"
Dim Count, Count2, PageHTML, Tag, a, b, c, Word, Code, Javascript, CodeWord
Do While Not IsNull(Forms![web pages]![URL])
PageHTML = Forms![web pages]![Content]
b = 1
Javascript = ""
```

Fig 2

```
Tag = True
    For a = 1 To (Len(PageHTML) - 0)
        If Mid(PageHTML, b, 1) = " " Or Mid(PageHTML, b, 1) = "<" Or Mid(Pa
TML, b, 1) = ">" Or Mid(PageHTML, b, 1) = "=" Or Mid(PageHTML, b, 1) = "\"
Mid(PageHTML, b, 1) = """" Or Mid(PageHTML, b, 1) = "/" Or Mid(PageHTML, b,
 = "." Or Mid(PageHTML, b, 1) = "!" Or Mid(PageHTML, b, 1) = vbCr Or Mid(Pa
TML, b, 1) = "," Or Mid(PageHTML, b, 1) = "-" Then
            Word = Mid(PageHTML, b, 1)
            If Not IsNull(Word) Then
                If Len(Word) > 0 Then
                    If Asc(Word) = 13 Then
                        a = a + 1
                        b = b + 1
                    End If
                Forms![web pages]![TempCode] = Word
                Forms![ShowCode].Requery
                Code = Forms![ShowCode]![ID]
                CodeWord = Forms![ShowCode]![Word]
                If IsNull(Code) Or Code = "undefined" Then Code = 1000
                If Code < 254 Then
                    If Tag = False And Word <> " " Then
                        Javascript = Javascript & Chr(254)
                        Tag = True
                    End If
                    If Tag = False And Word = " " Then
                        Javascript = Javascript & " "
                    End If
                    If Tag = True Then
                        Javascript = Javascript & Chr(Code)
                    End If
                Else
                    If Tag = True Then
                        Javascript = Javascript & Chr(255) & Word
                        Tag = False
                    Else
                        Javascript = Javascript & Word
                    End If
                End If
            End If
        End If
        b = a + 1
    End If
    If Mid(PageHTML, a + 1, 1) = " " Or Mid(PageHTML, a + 1, 1) = "<" (
id(PageHTML, a + 1, 1) = ">" Or Mid(PageHTML, a + 1, 1) = "=" Or Mid(PageH
 a + 1, 1) = "\" Or Mid(PageHTML, a + 1, 1) = """" Or Mid(PageHTML, a + 1,
 = "/" Or Mid(PageHTML, a + 1, 1) = "." Or Mid(PageHTML, a + 1, 1) = "!" Or
(PageHTML, a + 1, 1) = vbCr Or Mid(PageHTML, a + 1, 1) = "," Or Mid(PageHT
a + 1, 1) = "-" Then
            Word = Mid(PageHTML, b, (a - (b - 1)))
            If Not IsNull(Word) Then
                If Len(Word) > 0 Then
                    Forms![web pages]![TempCode] = Word
                    Forms![ShowCode].Requery
                    Code = Forms![ShowCode]![ID]
                    If IsNull(Code) Or Code = "undefined" Then Code = 1000
                    If Code < 254 Then
                        If Tag = False And Word <> " " Then
                            Javascript = Javascript & Chr(254)
                            Tag = True
                        End If
                        If Tag = False And Word = " " Then
```

FIG 3

```
                            Javascript = Javascript & " "
                     End If
                     If Tag = True Then
                            Javascript = Javascript & Chr(Code)
                     End If
                Else
                     If Tag = True Then
                            Javascript = Javascript & Chr(255) & Word
                            Tag = False
                     Else
                            Javascript = Javascript & Word
                     End If
                End If
           End If
      End If
      b = a + 1
  End If
  Next
Forms![web pages]![Javascript] = Javascript
Open ("c:\websites\first\code.guy") For Output As #1
Print #1, Javascript
Close #1
Javascript = ""
Tag = False
DoCmd.RunMacro "Web Pages Next Record"
Loop
End Function


Public Function Uncompress()
' // copyright Guy Middleton May 5 1999 Euronet UK Ltd. No use of this cod
 method can be made without permission from the owner in writing
' This utitlity reads all the web pages currently in the database writes a
pressed version
DoCmd.RunMacro "Web Pages First Record"
Dim Count, Count2, PageHTML, Tag, a, b, c, Word, Code, Javascript, NewHTML
Do While Not IsNull(Forms![web pages]![URL])
Javascript = Forms![web pages]![Javascript]
NewHTML = ""
b = 1
Tag = True
Code = 0
For a = 1 To (Len(Javascript) - 0)
     Code = Asc(Mid(Javascript, a, 1))
     If Code = 255 Then
          Tag = False
     End If
     If Code = 254 Then
          Tag = True
     End If
     If Code < 250 And Tag = True Then
          Forms![web pages]![TempCode] = Code
          Forms![ShowWord].Requery
          Word = Forms![ShowWord]![Word]
          NewHTML = NewHTML + Word
     End If
     If Code < 250 And Tag = False Then
          NewHTML = NewHTML + Mid(Javascript, a, 1)
     End If
Next
Forms![web pages]![NewContent] = NewHTML
NewHTML = ""
```

FIG 4

```
Tag = True
DoCmd.RunMacro "Web Pages Next Record"
Loop
End Function

Public Function WriteExpander()
' // copyright Guy Middleton May 5 1999 Euronet UK Ltd. No use of this coc
method can be made without permission from the owner in writing
Dim Text
End Function

Public Function WriteLibrary()
' // copyright Guy Middleton May 5 1999 Euronet UK Ltd. No use of this cod
method can be made without permission from the owner in writing
Dim Library, a
DoCmd.RunMacro "Words First Record"
Dim L(256)
For a = 1 To 256
    L(a) = ""
Next a
Dim i
Dim Word
For a = 1 To 174
If Not IsNull(Forms![words]![Word]) Then
    Word = Forms![words]![Word]
    i = a
    If Word = Chr(10) Then
        Word = Chr(252)
        i = 252
    End If
    If Word = Chr(13) Then
        Word = Chr(253)
        i = 253
    End If
    If Word = Chr(34) Then
        Word = Chr(246)
        i = 246
    End If
    If Word = Chr(92) Then
        Word = Chr(251)
        i = 251
    End If
    If i = 10 Then i = 248
    If i = 13 Then i = 249
    If i = 34 Then i = 250
    If i = 92 Then i = 251
    If i = 42 Or i = 43 Then i = i + 133
    If i >= 45 And i <= 57 Then i = i + 132
    If i >= 65 And i <= 90 Then i = i + 125
    If i = 95 Then i = 216
    If i >= 97 And i <= 122 Then i = i + 120
    If i = 129 Then i = 243
    If i = 141 Then i = 244
    If i = 143 Then i = 245
    If i = 144 Then i = 248
    If i = 157 Then i = 247
    L(i) = Word
    DoCmd.RunMacro "Words Next Record"
End If
Next a
DoCmd.RunMacro "Words First Record"
```

fig 5.

```
For a = 1 To 253
    If IsNull(L(a)) Or Len(L(a)) = 0 Then
    Word = "afsdkjhaslkdhjfuirewekrjuisdfjhkasdue"
    Else
    Word = L(a)
    End If
    If Word = Chr(252) Then Word = Chr(10)
    If Word = Chr(253) Then Word = Chr(13)
    If Word = Chr(246) Then Word = Chr(34)
    If Word = Chr(251) Then Word = Chr(92)
    Forms![words]![Word] = Word
    If Word = Chr(10) Then Word = Chr(252)
    If Word = Chr(13) Then Word = Chr(253)
    If Word = Chr(34) Then Word = Chr(246)
    If Word = Chr(92) Then Word = Chr(251)
    If Word = "afsdkjhaslkdhjfuirewekrjuisdfjhkasdue" Then Word = ""
    Library = Library & "," & Word
    DoCmd.RunMacro "Words Next Record"
Next a
    Forms![web pages]![Library] = Library
End Function

Public Function checkcodes()
Dim NewHTML
Dim a
NewHTML = ""
For a = 1 To 255
    If a <> 10 And a <> 13 And a <> 34 And a <> 92 Then
    NewHTML = NewHTML & Chr(a) & " "
    End If
Next
Forms![web pages]![NewContent] = NewHTML
End Function
```

FIG. 6

```
<html>
<head><title>Wimbledon FC - The Official Web Site</title></head>
<body background="back.gif" bgcolor="#000060" text="#ffffff" link=
"#ffd000" vlink="#ffd000" alink="#ffd000">
<p>
<center><a href="bannerc.map"><img src="bannerc.gif"  border="0" a
lt="Click the Crest to go H" ismap></a></center>
<P>
<center><table border=0 cellpadding=0 cellspacing=0 width=600>
<tr><td>
<table border=0 width=640>
<tr><td VALIGN=TOP>
<CENTER><img border=0 src="stat1.gif" vspace=1></CENTER>
<br>

<CENTER><img border=0 src="leaguet.gif"></CENTER><br>

<CENTER><b><FONT  COLOR="ffffff">CURRENT LEAGUE TABLE</FONT></b></
CENTER><p>
<center><font SIZE=-1 COLOR="FF0000">(Last Update: 6/4/98)</font><
/center><BR>
<font color="ffffff"><b>



<pre><b>
                   P   W   D   L   F   A  PTS
    1 Man Utd      32  19   6   7  60  23  63
    2 Arsenal      30  17   9   4  49  26  60
    3 Liverpool    31  15   9   7  54  34  54
    4 Chelsea      31  16   3  12  60  35  51
    5 Leeds        32  15   6  11  47  34  51
    6 Blackburn    30  14   9   7  51  39  51
    7 West Ham     31  14   5  12  44  40  47</font>
    8 Derby        31  13   6  12  44  41  45
    9 Aston Villa  33  13   6  14  40  42  45
   10 Coventry     31  11  11   9  37  36  44
   11 Southampton  32  13   4  15  41  44  43
   12 Leicester    31  10  11  10  36  33  41
   13 Sheff Wed    32  11   7  14  46  58  40
<font color="#C0000"> 14 Wimbledon    31   9  10  12  30  34  37</FONT>
   15 Newcastle    31   9   9  13  28  35  36
   16 Tottenham    32   9   8  15  33  49  35
   17 Everton      32   8  10  14  36  47  34
   18 Bolton       32   6  13  13  29  48  31
   19 Barnsley     32   9   4  19  33  73  31
   20 C Palace     31   6   8  17  27  54  26
</PRE>
```

FIG 7

Statta

```
</font>
<P>

<CENTER><img border=0 src="appeart.gif"></CENTER><P>

<table border=0>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>1</font></b></
td><td><B><a href="sullivan.htm"><FONT COLOR="ffd000" size=-1>Neil
  SULLIVAN</a></FONT></B></td><td><B>35</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>2</font></b></
td><td><B><a href="cunningham.htm"><FONT COLOR="ffd000" size=-1>Ke
nny CUNNINGHAM</a></FONT></B></td><td> <B>33</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>3</font></b></
td><td><B><a href="kimble.htm"><FONT COLOR="ffd000" size=-1>Alan K
IMBLE</a></FONT></B></td><td> <B>24</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>5</font></b></
td><td><B><a href="blackwell.htm"><FONT COLOR="ffd000" size=-1>Dea
n BLACKWELL</a></FONT></B></td><td> <B>32</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>6</font></b></
td><td><B><a href="thatcher.htm"><FONT COLOR="ffd000" size=-1>Ben
THATCHER</a></FONT></B></td><td> <B>25</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>7</font></b></
td><td><B><a href="chughes.htm"><FONT COLOR="ffd000" size=-1>Ceri
HUGHES</a></FONT></B></td><td> <B>17</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>8</font></b></
td><td><B><a href="earle.htm"><FONT COLOR="ffd000" size=-1>Robbie
EARLE</a></FONT></B></td><td> <B>23</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>9</font></b></
td><td><B><a href="ekoku.htm"><FONT COLOR="ffd000" size=-1>Efan EK
OKU</a></FONT></B></td><td> <B>16</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>11</font></b><
/td><td><B><a href="gayle.htm"><FONT COLOR="ffd000" size=-1>Marcus
  GAYLE</a></FONT></B></td><td> <B>31</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>12</font></b><
/td><td><B><a href="perry.htm"><FONT COLOR="ffd000" size=-1>Chris
PERRY</a></FONT></B></td><td> <B>34</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>13</font></b><
/td><td><B><a href="heald.htm"><FONT COLOR="ffd000" size=-1>Paul H
EALD</a></FONT></B></td><td> <B>2</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>15</font></b><
/td><td><B><a href="reeves.htm"><FONT COLOR="ffd000" size=-1>Alan
REEVES</a></FONT></B></td><td> <B>1</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>16</font></b><
/td><td><B><a href="mhughes.htm"><FONT COLOR="ffd000" size=-1>Mich
ael HUGHES</a></FONT></B></td><td> <B>25</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>17</font></b><
/td><td><B><a href="mcallister.htm"><FONT COLOR="ffd000" size=-1>B
rian McALLISTER</a></FONT></B></td><td> <B>6</B></td></tr>
```

FIG 8

```
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>18</font></b><
/td><td><B><a href="ardley.htm"><FONT COLOR="ffd000" size=-1>Neal
ARDLEY</a></FONT></B></td><td> <B>31</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>19</font></b><
/td><td><B><a href="castledine.htm"><FONT COLOR="ffd000" size=-1>S
tuart CASTLEDINE</a></FONT></B></td><td> <B>12</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>21</font></b><
/td><td><B><a href="jupp.htm"><FONT COLOR="ffd000" size=-1>Duncan
JUPP</a></FONT></B></td><td> <B>6</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>22</font></b><
/td><td><B><a href="clarke.htm"><FONT COLOR="ffd000" size=-1>Andy
CLARKE</a></FONT></B></td><td> <B>18</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>23</font></b><
/td><td><B><a href="euell.htm"><FONT COLOR="ffd000" size=-1>Jason
EUELL</a></FONT></B></td><td> <B>18</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>24</font></b><
/td><td><B><a href="fear.htm"><FONT COLOR="ffd000" size=-1>Peter F
EAR</a></FONT></B></td><td> <B>6</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>26</font></b><
/td><td><B><a href="cort.htm"><FONT COLOR="ffd000" size=-1>Carl CO
RT</a></FONT></B></td><td> <B>27</B></td></tr>
<tr><td align=right><B><FONT COLOR="ff0000" size=-1>29</font></b><
/td><td><B><a href="leaburn.htm"><FONT COLOR="ffd000" size=-1>Carl
 LEABURN</a></FONT></B></td><td> <B>9</B></td></tr>
</table>
<P>

<CENTER><img border=0 src="goalst.gif"></CENTER><P>

<FONT COLOR="ffffff"size=-1><B>
Ceri HUGHES &#160<img src="ball.gif">&#160 1<BR>
Robbie EARLE &#160<img src="ball.gif">&#160<img src="ball.gif">&#1
60<img src="ball.gif">&#160 3<BR>
Efan EKOKU &#160<img src="ball.gif">&#160<img src="ball.gif">&#160
 2<BR>
Marcus GAYLE &#160<img src="ball.gif">&#160<img src="ball.gif">&#1
60<img src="ball.gif">&#160 3<BR>
Chris PERRY &#160<img src="ball.gif">&#160 1<BR>
Michael HUGHES &#160<img src="ball.gif">&#160<img src="ball.gif">&
#160<img src="ball.gif">&#160&#160<img src="ball.gif">&#160<img sr
c="ball.gif">&#160<img src="ball.gif">&#160 6<BR>
Neal ARDLEY &#160<img src="ball.gif">&#160<img src="ball.gif">&#16
0<img src="ball.gif">&#160 3<BR>
Stuart CASTLEDINE &#160<img src="ball.gif">&#160<img src="ball.gif
"> 2<BR>
Andy CLARKE &#160<img src="ball.gif">&#160 1<BR>
Jason EUELL &#160<img src="ball.gif">&#160<img src="ball.gif">&#16
0<img src="ball.gif">&#160&#160<img src="ball.gif">&#160<img src="
ball.gif">&#160<img src="ball.gif">&#160<img src="ball.gif">&#160<
img src="ball.gif">&#160 8<BR>
Carl CORT &#160<img src="ball.gif">&#160<img src="ball.gif">&#160<
img src="ball.gif">&#160&#160<img src="ball.gif">&#160<img src="ba
```

FIG. 9

```
ll.gif">&#160<img src="ball.gif">&#160 6<BR>
Carl LEABURN &#160<img src="ball.gif">&#160<img src="ball.gif">&#1
60<img src="ball.gif">&#160 3<BR>
<P><br>
</B>
</td>
<td valign=top>

<CENTER><img border=0 src='face1.gif"></CENTER><p>
<CENTER><img border=0 src='resultst.gif"></CENTER><br>

<table border=0 cellpadding=0 cellspacing=5>
<tr>
<td><b><a href="donshliv.htm">Liverpool</a></font></b></td>
<td><b><a href="donshliv.htm">E</a></font></b></td>
<td><b><a href="donshliv.htm">1 - 1  Att 26,106</a></font></b></td
></tr>
<tr>
<td><b><a href="donsader.htm"><font color="#ffffff">Derby County</
a></font></b></td>
<td><b><a href="donsader.htm"><font color="#ffffff">A</a></font></
b></td>
<td><b><a href="donsader.htm"><font color="#ffffff">2 - 1  Att 24,
571 <FONT color="#ffffff" SIZE=-2><i>(abandoned 56min)</i></a></b>
</td></tr>
<tr>
<td><b><a href="donshsw.htm">Sheffield Wednesday</font></a></b></t
d>
<td><b><a href="donshsw.htm">E</font></a></b></td>
<td><b><a href="donshsw.htm">1 - 1  Att 11,503</font></a></font></
b></td></tr>

<tr>
<td><b><a href="donshch.htm">Chelsea</a></font></b></td>
<td><b><a href="donshch.htm">E</a></font></b></td>
<td><b><a href="donshch.htm">0 - 2  Att 22,237</a></font></b></td>
</tr>

<tr>
<td><b><a href="donsawh.htm"><font color="#ffffff">West Ham</a></f
ont></b></td>
<td><b><a href="donsawh.htm"><font color="#ffffff">A</a></font></b
></td>
<td><b><a href="donsawh.htm"><font color="#ffffff">1 - 3  Att 24,9
16</a></font></b></td></tr>

<tr>
<td><b><a href="donsanc.htm"><font color="#ffffff">Newcastle</font
></a></b></td>
<td><b><a href="donsanc.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsanc.htm"><font color="#ffffff">3 - 1  Att 36,5
```

FIG 9A

```
26</font></a></font></b></td></tr>

<tr>
<td><b><a href="donshcp.htm">Crystal Palace</a></font></b></td>
<td><b><a href="donshcp.htm">H</a></font></b></td>
<td><b><a href="donshcp.htm">0 - 1  Att 16,747</a></font></b></td>
</tr>

<TR>
<td><b><a href="donshba.htm">Barnsley</a></font></b></td>
<td><b><a href="donshba.htm">H</a></font></b></td>
<td><b><a href="donshba.htm">4 - 1  Att 7,668</a></font></b></td><
/tr>

<tr>
<td><b><a href="donsath.htm"><font color="#ffffff">Tottenham Hotsp
ur</font></a></b></td>
<td><b><a href="donsath.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsath.htm"><font color="#ffffff">0 - 0  Att 26,2
61</font></a></font></b></td></tr>

<tr>
<td><b><a href="donshbr.htm">Blackburn Rovers</a></font></b></td>
<td><b><a href="donshbr.htm">H</a></font></b></td>
<td><b><a href="donshbr.htm">0 - 1  Att 15,600</a></font></b></td>
</tr>

<tr>
<td><b><a href="donsaav.htm"><font color="#ffffff">Aston Villa</fo
nt></a></b></td>
<td><b><a href="donsaav.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsaav.htm"><font color="#ffffff">2 - 1  Att 32,0
87</font></a></font></b></td></tr>

<tr>
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ont></a></b></td>
<td><b><a href="donsadc.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsadc.htm"><font color="#ffffff">1 - 1  Att 28,5
95</font></a></font></b></td></tr>

<tr>
<td><b><a href="donshlu.htm">Leeds United</a></font></b></td>
<td><b><a href="donshlu.htm">H</a></font></b></td>
<td><b><a href="donshlu.htm">1 - 0  Att 15,718</a></font></b></td>
</tr>

<tr>
```

FIG 10

```
<td><b><a href="donshcc.htm">Coventry City</a></font></b></td>
<td><b><a href="donshcc.htm">E</a></font></b></td>
<td><b><a href="donshcc.htm">1 - 2   Att 11,201</a></font></b></td>
</tr>

<tr>
<td><b><a href="donsalc.htm"><font color="#ffffff">Leicester City<
/font></a></b></td>
<td><b><a href="donsalc.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsalc.htm"><font color="#ffffff">1 - 0   Att 18,5
53</font></a></font></b></td></tr>

<tr>
<td><b><a href="donshmu.htm">Manchester United</a></font></b></td>
<td><b><a href="donshmu.htm">H</a></font></b></td>
<td><b><a href="donshmu.htm">2 - 5   Att 26,309</a></font></b></td>
</tr>

<tr>
<td><b><a href="donsabw.htm"><font color="#ffffff">Bolton Wanderer
s</font></a></b></td>
<td><b><a href="donsabw.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsabw.htm"><font color="#ffffff">0 - 1   Att 22,7
03</font></a></font></b></td></tr>

<tr>
<td><b><a href="donshsh.htm">Southampton</a></font></b></td>
<td><b><a href="donshsh.htm">H</a></font></b></td>
<td><b><a href="donshsh.htm">1 - 0   Att 12,009</a></font></b></td>
</tr>

<tr>
<td><b><a href="donsaev.htm"><font color="#ffffff">Everton</font><
/a></b></td>
<td><b><a href="donsaev.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsaev.htm"><font color="#ffffff">0 - 0   Att 28,5
33</font></a></font></b></td></tr>

<tr>
<td><b><a href="donsach.htm"><font color="#ffffff">Chelsea</font><
/a></b></td>
<td><b><a href="donsach.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsach.htm"><font color="#ffffff">1 - 1   Att 34,1
00</font></a></font></b></td></tr>


<tr>
<td><b><a href="donshwh.htm">West Ham</a></font></b></td>
```

FIG 11

```
<td><b><a href="donshwh.htm">H</a></font></b></td>
<td><b><a href="donshwh.htm">1 - 2  Att 22,087</a></font></b></td>
</tr>


<tr>
<td><b><a href="donsaliv.htm"><font color="#ffffff">Liverpool</fon
t></a></b></td>
<td><b><a href="donsaliv.htm"><font color="#ffffff">A</font></a></
b></td>
<td><b><a href="donsaliv.htm"><font color="#ffffff">1 - 2  Att 38,
011</font></a></font></b></td></tr>

<tr>
<td><b><a href="donsawr.htm"><font color="#ffffff">Wrexham (FAC 3R
)</font></a></b></td>
<td><b><a href="donsawr.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsawr.htm"><font color="#ffffff">3 - 2  Att 9,53
9</font></a></font></b></td></tr>

<tr>
<td><b><a href="donshdc.htm">Derby County</a></font></b></td>
<td><b><a href="donshdc.htm">H</a></font></b></td>
<td><b><a href="donshdc.htm">0 - 0  Att 13,031</a></font></b></td>
</tr>

<tr>
<td><b><a href="donsasw.htm"><font color="#ffffff">Sheffield Wedne
sday</font></a></b></td>
<td><b><a href="donsasw.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsasw.htm"><font color="#ffffff">1 - 1  Att 22,6
55</font></a></font></b></td></tr>

<tr>
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/font></a></b></td>
<td><b><a href="donsacp.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsacp.htm"><font color="#ffffff">3 - 0  Att 14,4
10</font></a></font></b></td></tr>


<tr>
<td><b><a href="donshav.htm">Aston Villa</a></font></b></td>
<td><b><a href="donshav.htm">H</a></font></b></td>
<td><b><a href="donshav.htm">2 - 1</a></font></b></td></tr>

<tr>
<td><b><a href="donsaba.htm"><font color="#ffffff">Barnsley</font>
</a></b></td>
```

FIG 12

```
<td><b><a href="donsaba.htm"><font color="#ffffff">A</font></a></b
></td>
<td><b><a href="donsaba.htm"><font color="#ffffff">1 - 2   Att 14,4
10</font></a></font></b></td></tr>

<tr>
<td><b><a href="donshar.htm">Arsenal</a></font></b></td>
<td><b><a href="donshar.htm">H</a></font></b></td>
<td><b><a href="donshar.htm">0 - 1</a></font></b></td></tr>

<tr>
<td><b><a href="donshlc.htm">Leicester City</a></font></b></td>
<td><b><a href="donshlc.htm">H</a></font></b></td>
<td><b><a href="donshlc.htm">2 - 1</a></font></b></td></tr>

<tr>
<td><b><a href="donsamu.htm"><font color="#ffffff">Manchester Unit
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Fig 13

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FIG 14

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FIG 15

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7   H03M7/30   H04L29/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7   H03M   H04L   G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

INSPEC, COMPENDEX, EPO-Internal, IBM-TDB, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SATOH T ET AL: "Performance analysis of the wireless hypermedia system" 1997 IEEE INTERNATIONAL CONFERENCE ON PERSONAL WIRELESS COMMUNICATIONS (CAT. NO.97TH8338), 1997 IEEE INTERNATIONAL CONFERENCE ON PERSONAL WIRELESS COMMUNICATIONS CONFERENCE PROCEEDINGS, MUMBAI, INDIA, 17-19 DEC. 1997, pages 293-296, XP002146973 1997, New York, NY, USA, IEEE, USA ISBN: 0-7803-4298-4	1,2,8, 10,11
A	the whole document	3-7,9, 12,13

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[X] Further documents are listed in the continuation of box C.   [X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
8 September 2000	25/09/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Berbain, F

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	BOUVIER D J: "THE STATE OF HTML" SIGICE BULLETIN,US,ASSOCIATION FOR COMPUTING MACHINERING, vol. 21, no. 2, 1 October 1995 (1995-10-01), pages 8-13, XP000563098 the whole document ---	1-13
X	EP 0 797 158 A (FUJITSU LTD) 24 September 1997 (1997-09-24) column 13, line 6 -column 22, line 11	1,2,8, 10,11
A	abstract ---	3-7,9, 12,13
X	EP 0 896 284 A (FUJITSU LTD) 10 February 1999 (1999-02-10) figure 2	1,2,8, 10,11
A	abstract ---	3-7,9, 12,13
X	EP 0 844 768 A (WEBTV NETWORKS INC) 27 May 1998 (1998-05-27) figure 3	1,2,8, 10,11
A	abstract ---	3-7,9, 12,13
P,A	WO 99 27460 A (HASSETT GREGORY P ;KOVALCHUK ALEKSANDR (US); BELOV LEV (US); DOUGL) 3 June 1999 (1999-06-03) claims 1-12 -----	1-13

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			CN	1168029 A	17-12-1997
			US	5854597 A	29-12-1998
EP 0896284	A	10-02-1999	JP	11053349 A	26-02-1999
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			AU	5264398 A	10-06-1998
			JP	10190471 A	21-07-1998
			WO	9822880 A	28-05-1998
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